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INFORMATION RETRIEVAL

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Radiation-10, Light-9, Intensity-6, Concentration-6, Removal-4, Pollutants-9, Water-5, Carbon Dioxide-2, Carbon Monoxide-2.

Abstract: The photodecomposition of aqueous solutions of formic acid was studied as a model reaction for removing organic pollutants from water. The process was carried out in a tubular-flow reactor, operated continuously. The cylindrical reactor was irradiated from the outside by placing the cylindrical lamp and the reactor at the foci of an elliptical reflector. Measurements made at differential operating conditions permitted calculation of rates of reaction as a function of formic acid concentration and light intensity. Carbon dioxide and carbon monoxide were the only observed products of the decomposition.

Drop size distributions produced by turbulent pipe flow of immiscible liquids, Collins, S. B., and J. G. Knudsen, **AIChE Journal, 16,** No. 6, p. 1072 (November, 1970).

Key Words: A. Distribution-7, 8, Size-7, 8, 9, Drops-9, Flow-9, Turbulent-0, Pipe-9, Liquids-9, Immiscible-0, Turbulence-6, Velocity-6, Breakup-7, Mathematical Model-10, Stochastic Model-10.

Abstract: Drop size distributions in turbulently flowing dispersion of immiscible liquids were investigated. The observed drop size distributions were actually a composite of two superimposed distributions. One is the distribution produced by the injection nozzle and the other is that produced by breakup in the turbulent flow field. A mathematical model was developed which predicted both the shape of the observed distributions and kinetics of the droplet breakup process for the distribution produced by the turbulent flow field.

Feedback control of an enriching column, Shoneman, Keith, and Jack A. Gerster, **AIChE Journal, 16,** No. 6, p. 1080 (November, 1970).

Key Words: A. Control-8, Distillation Column-9, Enriching-4, Feedback Control-8, Closed Loop-0, Ziegler-Nichols Method-10.

Abstract: The transient behavior of a 24-in. diam., 10-tray enriching column was investigated experimentally while the column was operated under closed-loop, feedback control. This behavior was compared with that of a perturbated linear model with the column open-loop behavior being represented with simple transfer functions in the frequency domain. Comparisons showed that control parameters determined using the predictive linear model were conservative and permitted stable and smooth responses of the experimental column.

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cellent preparation for someone studying for a comprehensive examination; it would also make a good starting point for an engineer embarking on a continuing education program after having been away from studies for some years.

The problems are for the most part very well chosen; many are qualitative, and none involve extensive computations. It does seem, however, that the author could have taken some advantage of the opportunity to put an engineering flavor onto many of his problems, rather than staying in the realm of basic scientific analysis as he has done. Questions of the type, "Devise a process which will . . . ." could have been quite effective illustrations and discussion vehicles.

Learning through direct involvement in problems can be highly beneficial, and this book should be a valuable experience for anyone who uses it in the intended way. It is easy to take the short way out, however, and anyone who proceeds on to the answers without reasoning the problems out for himself will lose much of the value of the book. The pages are all perforated, but this does not make the answers any less available, nor does there seem to be any reason to remove the pages after one has completed them. The book has a good nomenclature section, but no index; this hampers the reader in referring back to previous textural material.

Professor Ranz's book has much to offer to anyone who will give it the thought and time which it demands.

C. Judson King
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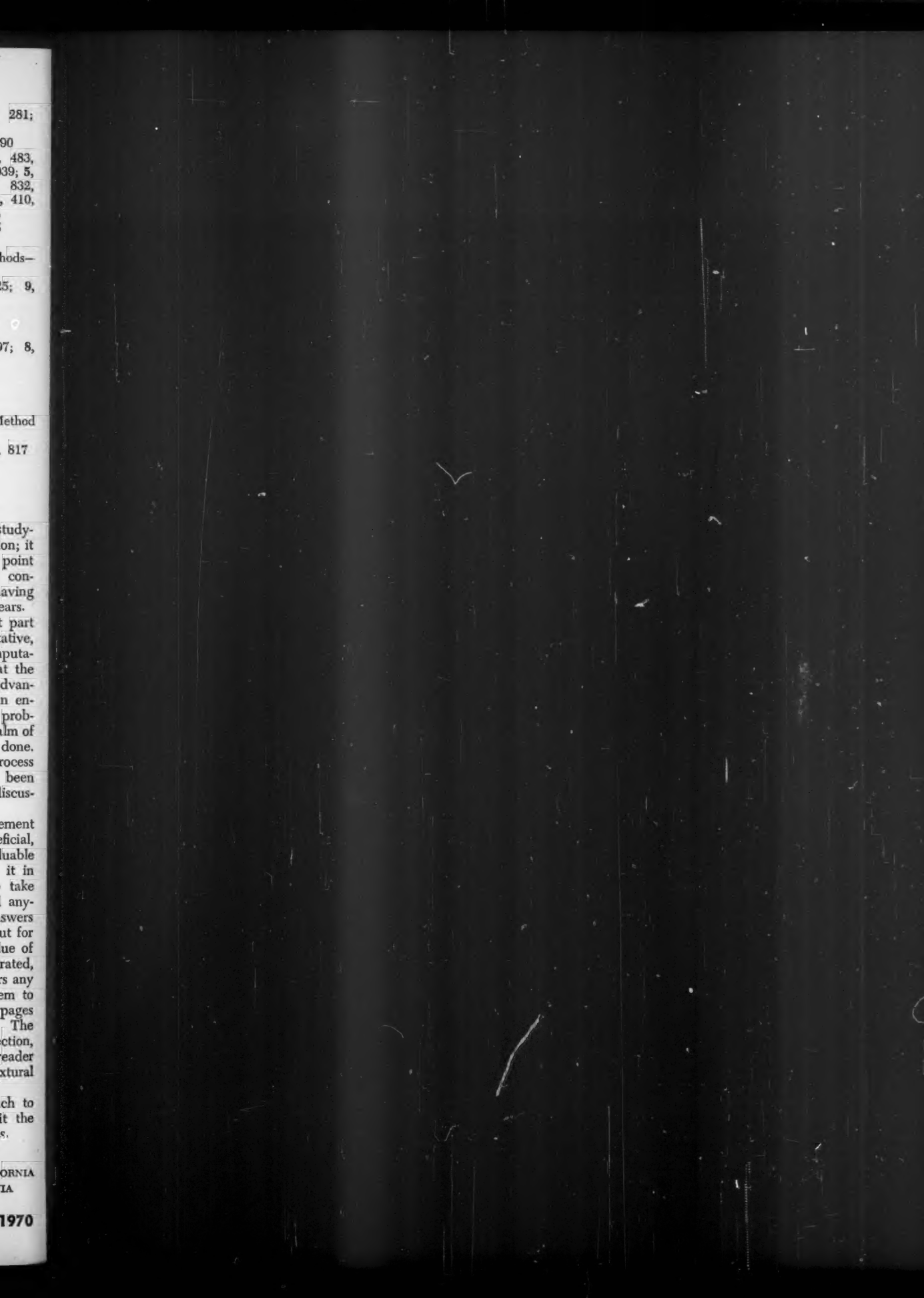

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